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 Issues 7

 Pull requests 6

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# Activating a research fault localization bot on your project? #864

Edit

New issue


 Open


 dginelli opened this issue 26 days ago · 2 comments



dginelli commented 26 days ago

Spammy





Hi!

We are software engineering researchers and are currently looking for active open-source projects where we could test a new cool software bot: flacocobot!

When a new pull request is open, if it has test failures/errors, flacocobot analyzes the failure and posts a diagnosis as comments to the pull request, highlighting the most suspicious lines that likely need to be analyzed to fix the bug.

flacocobot works as follows:

- When a new PR is open, if the test suite fails, flacocobot starts its analysis.
- The top k suspicious (potentially buggy) lines of code are then highlighted as comments to the PR.

We would love to have your feedback in order to understand what you like or you do not like, what we can improve, and if you find it useful!

If you are interested in trying it, we will run flacocobot on your project for a period of two weeks and then give you a 1-minute questionnaire to collect your feedback.

What do you think? Can we activate flacocobot for [spring-petclinic](#)?

Thanks,

Davide ([@dginelli](#)), André ([@andre15silva](#)), Matias ([@martinezmatias](#)), Benjamin ([@danglotb](#)), Martin ([@monperrus](#))

You can find out more in our tools repos:

- <https://github.com/SpoonLabs/flacoco>
- <https://github.com/eclipse/repairnator>

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone


Linked pull requests

Successfully merging a pull request may close this issue.

None yet



Notifications


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2 participants







dsyer commented 17 days ago

Member






I'm happy to learn more (but disinclined to add more tools to this project TBH). I looked in the flacoco link and didn't find any docs, so I'm not sure how it works. The examples don't include any dependencies or plugins that are flacoco branded, so it looks like they are just simple Java apps with some tests.




dginelli commented 17 days ago

Author

Spammy





Hi [@dsyer](#),


Thank you for your answer. We are happy that you are interested in the project. You can see an example of review comments generated by flacocobot on [this pull request](#).

When flacocobot starts to scan a project, it searches for the open and failed pull requests created in the last 7 days. Then, for the next iterations, it searches for new pull requests or updates in the pull requests previously inspected (without considering updates related to the addition of new comments or review comments).

When flacocobot finds a pull request that satisfies the requirements, it clones the source code associated with that pull request in an isolated Docker environment and it executes the test cases associated with the project.

Flacoco localization tool uses JaCoCo to instrument the program under analysis and record the covered lines by each test case. This step is important to allow Flacoco to associate a suspiciousness score to every line. The higher the score, the higher the likelihood that a line is related to the failure. For example, if a line is executed only by test cases that pass, this line has a suspiciousness score lower than a line that is executed only by test cases that end with a failure or an error.

After Flacoco localization finds all the lines that might be associated with the bug, the last step is to check which lines are in the diff introduced by the pull request compared to the original source code. flacocobot suggests the top 5 most suspicious lines, contained also in the diff, in a review comment to the analyzed pull request.




Write

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